

CLAIMS

What is claimed is:

1. A method comprising:

creating an exposure image in a radiation sensitive layer by exposing the radiation sensitive layer to radiation; and
modifying the exposure image by treating the exposure image with a substantially heterogeneous thermal treatment.
2. The method of claim 1, wherein:

creating the exposure image comprises creating a first exposure feature contained in a first region and creating a second exposure feature contained in a second region; and
modifying the exposure image comprises treating the first region with a first thermal flux and treating the second region with a second substantially different thermal flux.
3. The method of claim 1, wherein modifying the exposure feature further comprises specifying the heterogeneous thermal treatment by adjusting a height adjustable spacer.
4. The method of claim 1:

wherein the exposure image comprises a first critical dimension having an undersizing error and a second critical dimension having an oversizing error; and
wherein modifying further comprises reducing the undersizing error by increasing a temperature of the first critical dimension by a first amount at a particular time and increasing a temperature of the second critical

dimension by a second amount that is less than the first amount at the particular time.

5. A thermal modification system comprising a variable thermal input system to provide a heterogeneous thermal treatment comprised of a plurality of different thermal flux to an exposure image in a radiation sensitive layer.
6. The system of claim 5, wherein the variable thermal input system comprises and adjustment system to specify the heterogeneous thermal treatment and a plurality of different heterogeneous treatments.
7. The system of claim 5, wherein the adjustment system comprises a height adjustable spacer to adjust a separation distance between the thermal energy source and the first exposed feature. *✓ AB*
8. The system of claim 7, wherein the adjustable spacer comprises a screw.
9. The system of claim 7, wherein the adjustable spacer comprises a piezoelectric substance to adjust the separation distance based on an input voltage.
10. The system of claim 7, wherein the adjustable spacer is removable from the thermal modification system.
11. The system of claim 7, further comprising an insulator functionally coupled with the adjustable spacer to reduce conductive transfer of thermal energy between the thermal energy source and the radiation sensitive layer.
12. The system of claim 7, wherein the adjustment system comprises a plurality of height adjustable spacers.

13. The system of claim 5, further comprising:

a hot plate to provide a thermal treatment; and
an adjustment system to modify the thermal treatment to provide a first thermal treatment to a first portion of an exposure image and a second treatment to a second portion of an exposure image.

14. The system of claim 5:

further comprising a radiation sensitive layer having a first exposed feature having a first predetermined error and a second exposed feature having a second predetermined error; and

wherein the thermal modification system is a thermal modification system to be adjusted based on the first and second predetermined errors to provide an error reducing heterogeneous treatment comprising a first treatment to reduce the first predetermined error and a different second treatment to reduce the second predetermined error.

15. A mask comprising a pattern created by exposing a radiation sensitive layer to radiation to create an exposure image, modifying the exposure image by treating the exposure image with a non-uniform thermal treatment comprised of a first position dependent thermal treatment and a second different position dependent thermal treatment, and creating the pattern feature based on the treated portion.

16. The mask of claim 15, further created by modifying the exposure image by treating the exposure image with different amounts of radiant heat energy from an adjustable variable thermal input system comprising a predetermined adjustment.

17. The mask of claim 15, further created by creating the pattern by developing at least a portion of the radiation sensitive layer comprising the treated portion and etching at least a portion of a radiation opaque layer proximate to the treated portion.
 18. The mask of claim 15, further created by:

exposing an exposure image having a first exposure feature with a first error and a second exposure feature with a second error; and modifying the exposure image by treating the first feature with a first predetermined error reducing treatment that is based on the first error and treating the second feature with a second predetermined error reducing treatment that is based on the second error.
 19. A system comprising:

a thermal energy source to provide a uniform thermal treatment; and adjustment means to make the uniform thermal treatment substantially non-uniform.
 20. The system of claim 19, wherein the adjustment means comprises a height adjustable spacer.
 21. The system of claim 19, further comprising a mask having a semiconductor device manufacturing pattern that is created by the system.